

ACC: Unit 6 : Data and Data Analysis

Content Area: **Mathematics**
Course(s): **Math 6 Accelerated**
Time Period: **March**
Length: **5 weeks**
Status: **Published**

Unit Summary

The goal for this unit is to develop students' understanding of statistics by interpreting, describing, and analyzing a data set and display.

Standards

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.7.G.B.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
MA.6.SP.A.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
MA.6.SP.A.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
MA.6.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
MA.6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
MA.6.SP.B.5a	Reporting the number of observations.
MA.6.SP.B.5b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
MA.6.SP.B.5c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
MA.6.SP.B.5d	Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
MA.6.4.5.6 F.1	Use technology to gather, analyze, and communicate mathematical information.
MA.6.4.5.6 F.4	Use calculators as problem-solving tools (e.g., to explore patterns, to validate solutions).

CAEP.9.2.8.B.3	Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.
TECH.8.1.8	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.8.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.CS1	Understand and use technology systems.
TECH.8.1.8.A.CS2	Select and use applications effectively and productively.
TECH.8.1.8.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.8.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.8.C.CS4	Contribute to project teams to produce original works or solve problems.
TECH.8.1.8.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.8.D.1	Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.
TECH.8.1.8.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.8.D.CS2	Demonstrate personal responsibility for lifelong learning.
TECH.8.1.8.D.CS3	Exhibit leadership for digital citizenship.
TECH.8.1.8.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.8.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.1.8.F.CS2	Plan and manage activities to develop a solution or complete a project.
TECH.8.2.8.D.CS2	Use and maintain technological products and systems.

Student Learning Objectives

- Students will learn to recognize and write a statistical question.
- Students will learn that a set of data is collected to answer a statistical question and has a distribution which can be described by its center, spread, and overall shape.
- Students will learn the measure of center and what it represents.
- Students will learn to display and interpret data in a variety of data displays.
- Students will learn the uses of data displays.
- Students will learn the shape of data distribution and what it represents.

Essential Questions

- How can information be gathered, recorded, and organized?
- How can we display data accurately?

- How does the data and statistical question determine the data display?
- How the quality of the question used impacts the data collected and validity of the results?
- Do graphs display data in a concise manner?
- What aspects of a data display help people easily and accurately interpret the presented data?
- What questions can and can not be answered from a data display?

Enduring Understandings

- Students will understand that there is a use of a statistical question.
- Students will understand that graphs display data in a concise manner.
- Students will understand that there are uses of measure of center.
- Students will understand that the choice of measures of center and variability impact the shape of the data distribution.
- Students will understand that there are differences in interpretation of various data displays.
- Students will understand that random samples can be used to make inferences about a population.

Application

- Students will be able to independently use their learning to write and interpret a statistical question in a manner in which they can collect, display, and interpret the data accurately.

Skills

Students will be skilled at:

- Writing and interpreting a statistical question.
- Collecting, recording, and organizing data.
- Displaying and interpreting the collected data in various data displays.
- Determining measures of center.
- Recognizing measure of center summarizes all of data's values.
- Determining and recognizing variability within a data set.